

## Tackling Challenges

On April 2, 2019, the Council on Dairy Cattle Breeding (CDCB) released its first multi-breed genomic evaluation.

The collaborative research and development by United States Department of Agriculture, Animal Genomics and Improvement Laboratory and CDCB produced a cutting-edge approach. The result is a multi-breed blended evaluation based on a weighted average of the single breed SNP effects for multiple breeds—allowing all genotyped animals to receive the best possible estimate of their genetic value.

The American Jersey Cattle Association (AJCA) has a long history of supporting research and development of genomic evaluations. Early adoption of genomics helped to accelerate genetic gains within the breed. The AJCA has experienced the rewards and challenges associated with the science. As the knowledge of genomics grew, and challenges were addressed, leadership witnessed the need for differentiating breed genetics. In 2016, CDCB developed and published values for Breed Base Representation (BBR) to help distinguish breed composition amongst dairy cattle.

Continued research leading up to the April 2019 release indicated BBRs needed to be recalculated to more accurately identify genetic makeup within individuals.

New BBR values were issued with the release for all genotyped Jerseys. Those with BBRs of 100 are included in the PTA Reference Group for the Jersey breed. Ones having a new BBR of 90 or higher were evaluated on a single-breed basis (S), and animals with BBRs lower than 90 were evaluated on the new multi-breed (M) basis.

With the April release, there are 223,165 identified animals in the AJCA database with BBRs. About 12%, or 26,296 animals, had BBRs that differed from previous calculations. This includes 3,689 females and 298 males with BBRs that fell below the 90 level. There were 223 females and 30 males previously below the 90 BBR that moved above that threshold. Of the 328 bulls affected, 81 of them had NAAB codes associated with them.

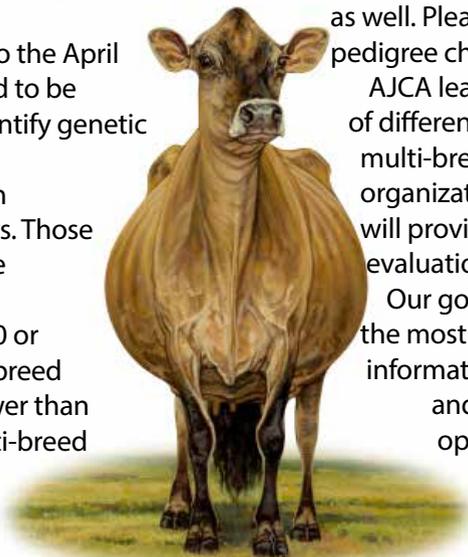
At the March 2019 board meeting, AJCA directors approved several changes in how the information will be published. The Green Book reports will distinguish between the type of evaluation. One section of reports will be the animals with an “S” evaluation and another separate section will include the animals with an “M” evaluation.

These updates will also be evident on the AJCA Official Performance Pedigrees and Progeny Reports. An “S” or an “M” will appear after the CDCB GPTA and before the release date, designating the type of evaluation being provided.

All multi-breed blended evaluations will have an “M” appear after the JPI number as well. Please see page 26 for a sample of the pedigree changes.

AJCA leadership recognizes the value of differentiating between single-breed and multi-breed evaluations and as an organization is confident these summaries will provide more accurate genomic evaluations.

Our goal remains to provide the most accurate and transparent information to advance the Jersey breed and keep Jersey the most profitable option in the dairy industry.



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